

REMARKS

Claims 1-23 are pending and rejected in this application. Claims 1, 11 and 16 are amended hereby.

Responsive to the Examiner's rejection of claims 1-4, 8, 9, 11, 12, 16 and 18 under 35 U.S.C. § 102 (b) as being anticipated by U.S. Patent No. 5,900,178 (Johnsen), Applicant has amended claims 1, 11 and 16, and submits that claims 1-4, 8, 9, 11, 12, 16 and 18 are now in condition for allowance.

Johnsen discloses a device for melting snow or ice (Figs. 1-3) including a control unit 1 and a temperature sensor 4. When the temperature rises and passes a chosen value of -0.4°C temperature sensor 4 measures the surface temperature of the roof surface. If water detector 9 registers water during a period of thirty minutes after connection, main heating cable 11 is connected by control unit 1. The main heating cable remains connected until air temperature sensor 6 registers the air temperature has risen to a chosen value of $+0.4^{\circ}\text{C}$. This is, however, conditioned by the fact snow sensor 7 at intervals registers snow at the roof surface. For this reason, water detector 9 is connected again for a chosen time period of ten minutes every four hours after the first disconnection. If water is registered during the time period, main heating cable 11 shall stay connected. If however, water is not registered in the course of the ten minute period, the heating cable is switched off even if the air temperature has not reached $+0.4^{\circ}\text{C}$ (column 3, line 50 through column 4, line 19).

In contrast claim 1, as amended, recites in part:

a controller...directing status information about at least one said sensor to at least one said heater element, said status information being directed to at least one said heater element regardless of ambient temperature.

(Emphasis added). Applicant submits that such an invention is neither taught, disclosed nor suggested by Johnsen or any of the other cited references, alone or in combination, and includes distinct advantages thereover.

Johnsen discloses a device for melting snow or ice the method including measuring the surface temperature of the roof and controlling the power to a heating table based upon the temperature. In contrast, Applicant's invention sends information about the controller or information about sensors connected thereto, in the form of status information, to a heating element. The status information reports information about the condition of the sensor, which allows an operator to determine its functional status. In Johnsen the temperature sensor detects a predetermined temperature which is utilized to turn on or off the heating element. In Johnsen the temperature sensed is only conveyed if the temperature sensor crosses the chosen value and causes a reaction by the control unit. Johnsen does not send information to the heating element about the temperature sensor at any other time. In contrast Applicant's invention reports the status of the sensor by sending information to the heating element. For example, if the temperature is 70° the controller sends that information, in the form of a coded pulse stream, to the heater element to thereby allow a determination of the accuracy of the sensor. In Johnsen the temperature of the sensor itself must be altered in order to alter the power being supplied to the heating cable. Therefore, Johnsen and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a controller directing status information about at least one sensor to at least one heating element, the status information being directed to the at least one heating element regardless of ambient temperature, as recited in claim 1.

An advantage of Applicant's invention is that the temperature sensor does not have to have the temperature surrounding it changed in order to check on the functionality of the sensor.

A further advantage is that information about multiple sensors can be transferred to the heating element, thereby allowing an operator to detect the information and to decode therefrom the status of the sensors. The status information may be transferred in the form of pulses directed to the heating element. For the foregoing reasons, Applicant submits that claim 1, and claims 2-4, 8 and 9 depending therefrom are now in condition for allowance, which is hereby respectfully requested.

In further contrast claim 11, as amended, recites in part:

a controller...directing status information of the control assembly to said heater circuit regardless of ambient temperature.

(Emphasis added). Applicant submits that such an invention is neither taught, disclosed nor suggested by Johnsen or any of the other cited references, alone or in combination, and includes distinct advantages thereover.

Johnsen discloses a device for melting snow or ice the method including measuring the surface temperature of the roof and controlling the power to a heating table based upon the temperature. In contrast, Applicant's invention sends information about the controller or information about sensors connected thereto, in the form of status information, to a heating element. The status information reports information about the condition of the sensor, which allows an operator to determine its functional status. In Johnsen the temperature sensor detects a predetermined temperature which is utilized to turn on or off the heating element. In Johnsen the temperature sensed is only conveyed if the temperature sensor crosses the chosen value and causes a reaction by the control unit. Johnsen does not send information to the heating element about the temperature sensor at any other time. In contrast Applicant's invention reports the status of the sensor by sending information to the heating element. For example, if the temperature is 70° the controller sends that information, in the form of a coded pulse stream, to

the heater element to thereby allow a determination of the accuracy of the sensor. In Johnsen the temperature of the sensor itself must be altered in order to alter the power being supplied to the heating cable. Therefore, Johnsen and any of the other cited references, alone or in combination, fail to disclose, teach or suggest a controller directing status information of the control assembly to the heater circuit regardless of ambient temperature, as recited in claim 11.

An advantage of Applicant's invention is that the temperature sensor does not have to have the temperature surrounding it changed in order to check on the functionality of the sensor. A further advantage is that information about multiple sensors can be transferred to the heating element, thereby allowing an operator to detect the information and to decode therefrom the status of the sensors. The status information may be transferred in the form of pulses directed to the heating element. For the foregoing reasons, Applicant submits that claim 11, and claim 12 depending therefrom are now in condition for allowance, which is hereby respectfully requested.

In still further contrast claim 16, as amended, recites in part:

sending data on an electrical power conductor to a heater element based on said information regardless of ambient temperature.

(Emphasis added). Applicant submits that such an invention is neither taught, disclosed nor suggested by Johnsen or any of the other cited references, alone or in combination, and includes distinct advantages thereover.

Johnsen discloses a device for melting snow or ice the method including measuring the surface temperature of the roof and controlling the power to a heating table based upon the temperature. In contrast, Applicant's invention sends information about the controller or information about sensors connected thereto, in the form of status information, to a heating element. The status information reports information about the condition of the sensor, which allows an operator to determine its functional status. In Johnsen the temperature sensor detects a

predetermined temperature which is utilized to turn on or off the heating element. In Johnsen the temperature sensed is only conveyed if the temperature sensor crosses the chosen value and causes a reaction by the control unit. Johnsen does not send information to the heating element about the temperature sensor at any other time. In contrast Applicant's invention reports the status of the sensor by sending information to the heating element. For example, if the temperature is 70° the controller sends that information, in the form of a coded pulse stream, to the heater element to thereby allow a determination of the accuracy of the sensor. In Johnsen the temperature of the sensor itself must be altered in order to alter the power being supplied to the heating cable. Therefore, Johnsen and any of the other cited references, alone or in combination, fail to disclose, teach or suggest the step of sending data on an electrical power conductor to a heater element based on the information regardless of ambient temperature, as recited in claim 16.

An advantage of Applicant's invention is that the temperature sensor does not have to have the temperature surrounding it changed in order to check on the functionality of the sensor. A further advantage is that information about multiple sensors can be transferred to the heating element, thereby allowing an operator to detect the information and to decode therefrom the status of the sensors. The status information may be transferred in the form of pulses directed to the heating element. For the foregoing reasons, Applicant submits that claim 16, and claim 18 depending therefrom are now in condition for allowance, which is hereby respectfully requested.

Claims 5, 6, 13 and 14 have been rejected under 35 U.S.C. § 103 (a) as being unpatentable over Johnsen in view of U.S. Patent No. 6,428,671 (Sogo, et al.). However, claims 5 and 6 depend from claim 1 and claims 13 and 14 depend from claim 11, and claims 1 and 11 have been placed in condition for the reasons given above. Accordingly, Applicant submits that claims 5, 6, 13 and 14 are now in condition for allowance, which is hereby respectfully requested.

Claims 17, 19, 21 and 22 have been rejected under 35 U.S.C. § 103 (a) as being unpatentable over Johnsen in view of an Official Notice. However claims 17, 19, 21 and 22 depend from claim 16, and claim 16 has been placed in condition for allowance for the reasons given above. Accordingly, Applicant submits that claims 17, 19, 21 and 22 are now in condition for allowance, which is hereby respectfully requested.

The Examiner is hereby respectfully requested to provide evidence that one skilled in the art would find it obvious to modify a heating system to pulse electrical power to a power conductor and thence to a heating element in an on and off pattern depending upon the information and detecting the pattern in a conductor by an amp meter to thereby receive the information.

At page 3 of the Office Action the Examiner has discussed claims 7, 9 and 23 without indicating that they are rejected. Nonetheless, claims 7 and 9 depend from claim 1, and claim 23 depends from claim 16, and claims 1 and 16 have been placed in condition for allowance for the reasons given above. Accordingly, Applicant submits that claims 7, 9 and 23 are now in condition for allowance, which is hereby respectfully requested.

At page 3 of the Office Action, the Examiner has discussed claim 15 without indicating that it has been rejected. Nonetheless, claim 15 depends from claim 11, and claim 11 has been placed in condition for allowance for the reasons given above. Accordingly, Applicant submits that claim 15 is now in condition for allowance, which is hereby respectfully requested.

Claim 20 has been rejected under 35 U.S.C. § 103 (a) as being unpatentable over Johnsen in view of Official Notice discussed above, and in further view of U.S. Patent No. 3,909,601 (Yamawaki, et al.). However, claim 20 depends from claim 16, and claim 16 has been placed in

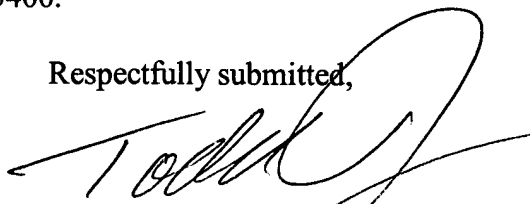
condition for allowance for the reasons given above. Accordingly, Applicant submits that claim 20 is now in condition for allowance, which is hereby respectfully requested.

For the foregoing reasons, Applicant submits that no combination of the cited references teaches, discloses or suggests the subject matter of the amended claims. The pending claims are therefore in condition for allowance, and Applicant respectfully requests withdrawal of all rejections and allowance of the claims.

In the event Applicants has overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicant hereby conditionally petitions therefor and authorizes that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (260) 897-3400.

Respectfully submitted,



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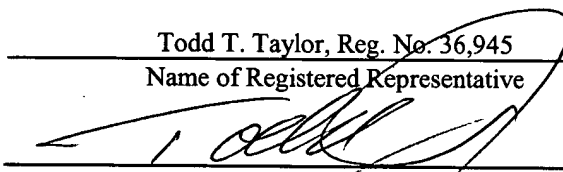
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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on: June 10, 2004.

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Name of Registered Representative



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June 10, 2004

Date

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